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### RECENT ADVANCES IN MEDICINE AND THEIR INFLUENCE ON THERAPEUTICS.

The Annual Address delivered before the Norfolk District Med. Society, May 10, 1871, by JOEL SEEVERS, M.D., Boston. Published by vote of the Society.

MR. PRESIDENT AND FELLOWS,—Having had the honor to be invited to address you to-day, I shall examine somewhat superficially, as time will compel, the question whether recent advances in medical knowledge tend to strengthen a belief that by the use of remedies we may prevent, arrest or cure those functional or pathological changes in the bodily organs which constitute disease, or a belief in what is called, *par excellence*, rational medicine. The latter is, perhaps, well enough defined in the following extract from an "Address on Medicine," by Dr. Gibson, before the British Medical Association, in August, 1870, and quoted by an admirer in the Boston Medical and Surgical Journal of the following month.

"Diseases have," he says, "so to speak, a life-time of their own, with its periods of growth, maturity, and decline. They are the passing tenants of the body, which they occupy often with great injury for a limited time. Treatment cannot change their nature, cannot expel them at once, cannot quench them, cannot materially shorten or prolong their existence."

O. W. Holmes calls it "the old question between Nature and Art," as if it were not as much a process of nature for a drug to have a certain effect on the system, as for chickenpox to get well in a certain length of time. Dr. Bigelow believes that most of the acute diseases cannot, when they have once gained a foothold in the system, "be eradicated or abridged by art." Many others have followed out these doctrines still farther, until many practitioners and theorists can more readily believe in any miraculous effect of imagination, diet or climate in disease, than in a removal of it by medicine or medical appliances.

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These disciples of the school of "rational medicine" claim still further that they constitute the leaders in science, that they are the party of progress, and that a belief that diseases are ever cured is old fashioned and unworthy of men acquainted with the developments of modern research. "The more positive knowledge we gain," says Prof. Holmes, "the more we incline to question all that has been received without absolute proof. The solemn skepticism of science has replaced the sneering doubts of witty philosophers." This by Holmes, the very prince of "witty philosophers."

Much of this skepticism is, however, not so much the product of advanced culture or superior intelligence as the result of fashion, or personal, or national peculiarities. The French school, even before the time of Louis, has led the way in much of this line of thought, and we have adopted it as we do many of their fashions in dress, with little attention to its propriety or fitness for our needs. Dr. Holmes says "the French, a not wholly uncivilized people, are in advance of the English and ourselves in the art of prescribing for the sick without hurting them." It might have occurred to him that his old foes the homeopaths were still farther in advance in the same art. What J. R. Lowell says of the French with regard to poetry may with slight alterations be applied to their medical characteristics. "The French mind is always strong in perceptive and analytic qualities, loving precision, grace, and finesse—prone to attribute an almost magical power to the scientific regulation, whether of politics or religion—its ideal is to combine the appearance of careless gaiety of thought with intellectual exactness of statement. The eternal watchfulness of a wit that never sleeps has made it distrustful of the natural emotions, and the unconventional expression of them; and its first question about a sentiment is, 'Will it be safe?' about a phrase, 'Will it pass the Academy?'"

And so it has been with them in clinical matters; no isolated fact, no personal ex-

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perience is allowed to contribute to the stock of knowledge if opposed to the deductions drawn from tabulated records. Wise and witty, but more than all sensitive to ridicule, many a French savan would prefer never to be right rather than be held up to derision in believing that which cannot be proved.

As with national so with personal peculiarities; whether a man shall be skeptical or credulous may depend somewhat on his position or education, but still more on the constitution of his brain. Lowell says, "There were born Popists or Wordsworthians, Lockists or Kantists"—so physicians are born into the homœopathic school, the school of expectant treatment, or the school of active medication. The mind of one, keen, watchful of facts, fertile in expedients, striving to make the most of his art, earnest that every human being under his treatment shall have the advantage of all the advances in science or resources of art, feels sure that cases of disease which would otherwise have gone on from bad to worse have been benefited by the remedies which he has applied; and he is indignant when other similar cases are allowed to go on untreated, possibly to the grave.

The mind of another, generalizing upon masses of men, the sum total of diseases, the inexactitude of methods of proof, and the multiplicity of grounds of error, argues that there is on the whole more probability that we are wrong in ascribing cures to remedies than we are in crediting them to general laws. Yet the hard logic of strong facts and personal observations is often too much for even these persons, and flashes of belief illumine even their clouds of skepticism. Almost every one believes in something. The author of "Self-Limited Diseases" believes that syphilis is cured by mercury, and that certain inflammatory attacks apparently yield to seasonable depletion. The author of "Currents and Counter-Currents in Medical Science" believes in opium, wine, specifics and anaesthetics; and most of all, apparently, that scraping the tongue cures typhoid; and the author of "Nature in Disease" believes that water-melon, taken in cubic half-foot doses, cures cholera morbus and diarrhoea. Margutte, in Pulcis poem of Morgante, the giant, acknowledges that

—"to tell thee truly  
My faith in black's no greater than in azure,  
But I believe in capons, roast meat, bouilli,  
And in good wines my faith's beyond all measure."

With this lengthy preface, then, I propose to look into the issue as between Na-

ture and Art, or the expectant school and the school of treatment, not hoping to solve the long vexed question, but only to take up some of the recent advances in medical science, and see in what direction they point so far as they bear on this question.

Amongst the most important of these advances is that in the physiology of the nervous system, commenced, we might say, by Marshall Hall some twenty years ago, in his studies upon the phenomena of reflex action, but infinitely more fully carried out within the last fifteen years under the lead of MM. Bernard and Brown-Séquard; who by their experiments on the section of the great sympathetic nerve, taught the influence of the ganglionic system over the blood supply, and the bodily temperature, and gave us a knowledge of the pathology of nervous diseases never before approached; investigations also by microscopists into what is called the "germ theory," and the nature of contagion; researches in the minute pathology of embolism and inflammation; and the examination of the physiological action of drugs. All these have a bearing on our question, and I shall consider them, not consecutively but incidentally, as they may conveniently present themselves.

Microscopists, in investigating the causes of the spread of contagious and epidemic diseases, have been struck by the fact that in bodies affected by certain of these are found various minute organisms, which are supposed to have had a part in the production of those diseases. These germs, or micrococci, or microzymes, as they are called as explained by Dr. Burdon Sanderson, are spheroidal particles which are associated with the commencement of decomposition of nitrogenous substances, putrefaction being the continuation of the same. They are, in general, exceedingly small, not more than  $\frac{1}{10000}$  of an inch in diameter, and known to be living organisms. They tend, under certain conditions, to elongate into rod-like bodies, called bacteridia, which are endowed with a peculiar progressive and oscillatory movement, called ameboid. They consist of cells rounded like a short cylinder, and multiply by constant division into two.

Of their connection with various maladies, Dr. Salisbury was the first in this country to declare his belief that measles were propagated by fungi, or their spores, generated in mouldy straw; he afterwards became of opinion that intermittent fever was the result of similar spores which abounded in low lands, and made similar

discoveries with regard to still other diseases. In cholera discharges, organic bodies have long been found. These researches have been much extended by eminent men abroad, as Chanveau, Davaine and Hallier of Vienna. The latter finds in the alvine discharges of a healthy child with common diarrhoea "numerous moving and motionless micrococci," which resemble those of cholera so closely that they may be regarded as identical with them. In the alvine liquid of dysentery colonies of micrococci are found in great numbers, together with conidia, the contents of which are transformed into micrococci, "which have a strong resemblance to those of cholera." The stools of enteric fever "teem with minute organisms." This micrococcus is much larger than those of cholera and diarrhoea; is frequently furnished with contractile processes and endowed with active oscillatory movements. In recurrent fever, micrococci exist in the blood; they infest the colored blood corpuscles, and are also furnished with cilia. In measles they are found in the sputa. In smallpox and cowpox they are found in the contents of the pustules, more numerous in the former than in the latter. In scarlet fever "the blood contains micrococci in extraordinary numbers; there is, indeed, no disease in which they are so abundant." They occur both separately and in colonies, and often infest the blood corpuscles. In syphilis "the blood is densely filled with them." They are also found in the gonorrhoeal discharge and in that of soft chancre.

Whether these organisms are of vegetable or animal origin, whether they are really the cause of the diseases they accompany, either by the activity which they exercise as living organisms, or by the products they give rise to, whether they are actually the contagious power, is a question still *sub judice*. Dr. Sanderson shows conclusive experimental reasons for declaring that each "contagion," as regards its physical form, consists essentially of extremely minute solid particles, and argues on grounds scarcely less certain that these effective particles are living, self-multiplying organic forms; in other words, that they are in every respect similar to, if not wholly identical with, the organisms referred to.

Lionel Beale, while he opposes Hallier and denies *in toto* that the contagious germs are fungi or parasites, or in any degree derived from the vegetable world, believes them the cause of disease, and declares, 1st, that the contagious corpuscles are living and growing matter; 2d, that they are not produced in the system of the

affected person, but are introduced from without; 3d, that they are capable of growth and multiplication in the blood; 4th, that the particles are so minute that they readily pass through the walls of the capillaries; and, lastly, that they can live and grow at the expense of the various tissues, and retain their vitality even after the original germinal matter has ceased to exist.

The similarity of these micrococci in different diseases, and the multiplicity of diseases in which they are found, has led to some incredulity as to their being the contagious virus or specific cause of those diseases; but Hallier maintains that although the microsymes of two different affections may be the same, the higher forms to which they severally unfold are or may be specifically distinct, and claims that from those higher forms, obtained by cultivation, he has been able to reproduce contagious microsymes. He claims, also, to have seen microsymes produced at the expense of the large reproductive cells of certain endophytes; but his opponents declare this to have been the result of the changes of decomposition in the protoplasm itself as putrescible matter.

Dr. Nichols, of this Society, in a communication to the Boston Medical and Surgical Journal, quotes from *Virchow's Archiv* an account of experiments made by Dr. Semmer, of Dorpat, in which true charbon was produced in a colt by the injection into its jugular veins of water containing bacteria and micrococcus cells from an animal with charbon.

Now this theory of living germs as the origin of contagious, infectious, or epidemic diseases, so far as it is proved or made probable even, has an important bearing on the question whether modern science can, by the use of remedies, do anything for the prevention or removal of disease. If disease arises from the entrance of these organisms into the system, and is extended by their communication from one to another, it at once becomes a vital problem how we shall either prevent their entrance by destroying them outside of the body, or limit their ravages when they have gained an entrance by so acting upon and modifying the tissues or fluids of the body as to render it an unfit habitation for them.

"It seems rational," says Angus Smith, "to treat the agents of disease existing in the air exactly as the Egyptians treated their dead, by the use of antiseptics; and unquestionably if organisms infect the air, they will die in the presence of these agents as animals and vegetables die, and be pre-

served as mummies are preserved, until washed into the soil. But if any one fears that the disease is only allayed by these means to burst out again, let him remove the disinfectants from the mummies and he might almost as soon expect them to return to life."

An instance of what may be done in the arrest of disease by acting upon the teachings of these investigations in microscopical pathology, is referred to by Professor Huxley in his Inaugural Address as President of the British Association for the Advancement of Science. In 1853, a disease broke out among the silk-worms, and went on with such violence that in 1856 the silk crop was reduced to one-third its previous amount. The result of the inquiries of eminent naturalists, as MM. Quatrefages, Filippi, Lebert and Pasteur, was that the disease was in almost every respect comparable to the cholera in mankind—that there was in the blood of the affected worms a multitude of cylindrical corpuscles, each about  $\frac{1}{1000}$  of an inch in diameter, which they called Panhistophyte, because they swarmed in every tissue of the body, even passing into the undeveloped eggs of the female moth, and that the growth and multiplication of these was the cause of the disease. Hence it became evident that to check the disease one must either prevent the occurrence of the conditions under which the generation of Panhistophyton arose, or else get rid of and keep away the germs from which it springs. M. Pasteur devised a means of effecting the latter, which was successful in extirpating the Panhistophyta and stopping the disease; and recent numbers of the *Comptes Rendus* of the French Academy of Sciences confirm this success, and contain votes of thanks and congratulatory addresses to M. Pasteur from various Italian Associations in acknowledgment of his services.

A still more pertinent illustration is perhaps this: Prof. Helmholtz, who had yearly for twenty years been a sufferer from hay-fever, discovered vibrios of a peculiar character in the secretions of his nose. After reading the experiments of Dr. Binz (which I shall again refer to) on the power of quinine over these lower organisms, he injected into his nostrils a weak solution of quinine, and the symptoms disappeared. The next year, as soon as the symptoms reappeared, he again used the same injection, and with equal success.

In Mr. Crooke's Report on the Use of Disinfectants in the Cattle Plague, he says: "In tracts of land, to which sewage disin-

fecting with carbolic acid has been applied, the sheep are free from foot-rot, the potatoes from disease. Obnoxious insects, such as the turnip-fly, gnats and dung-flies, are absent, and grubs, larvæ, and the lower forms of animal life, and infusoria, the invariable accompaniment of putrefying matter, disappear, while vegetation becomes remarkably healthy and luxuriant."

The germ theory has, it may be, still many points which remain in doubt; eminent men differ from each other with regard to results, but the whole evidence apart from special points of disagreement indicates clearly that an advance has been made in our knowledge of the etiology of contagious and epidemic diseases, and a broad field been opened for the application of remedies, old and new, for the prevention and cure of these diseases, and no amount of theorizing as to the inadequacy of remedies for the cure of such complaints can absolve us from the duty of using them.

Modern science has also been fortunate in discoveries on the minute pathology of inflammation, and the causes and course of dilatation or contraction in, ruptures of and stoppages in the small arteries; and, *pari passu* with these researches, have been made studies upon the physiological action of drugs; and I will now examine somewhat into them to see what their results indicate. Clinical experiences must be omitted in this review, as their results are so incapable of exact proof as to be always open to cavil. Leaving them out, then, I shall consider now such experiments only as have been made in connection with the microscope, or other physical means of exploration, by vivisection upon animals, and other similar investigations almost as capable of direct proof as the results of inorganic chemistry.

The foundation of all these rests primarily upon that knowledge of the functions of the sympathetic system that we have already referred to as initiated by the studies of recent physiology, and of which an account may be found in Dr. Edes's Prize Essay on the "Physiology and Pathology of the Sympathetic or Ganglionic Nervous System." When it was found that by various sections and other testings of the nerves, their functions and those of the ganglia were revealed, some partially and others with great exactitude, experimenters naturally turned to the study of the effect of drugs upon these parts, endeavoring not only to learn their general action, but the special tissues affected by them, and the order in which they became affected. The discovery that nerves connected



with the sympathetic system exercised an influence over the walls of the arteries (whence they were called vaso-motor nerves), and modified the amount of blood sent through these vessels, became of increased importance when it was discovered that these nerves could be excited or be paralyzed by the irritative or sedative action of certain drugs.

Thus it has been found that ergot of rye has the power of exciting contraction of the involuntary or unstriated muscular fibres of the uterus, bladder, gullet and stomach, bronchial tubes, ducts of some glands and the middle coats of arteries. Dr. Brown-Séquard observed that the vessels of the pia mater became much smaller under its influence and the reflex action of the spinal cord diminished.

Belladonna, or its alkaloid, has a like action on the involuntary muscles, but manifests its power on a different set of organs, as the pupil, the breast, the bowels and the vesical sphincter. Its action varies greatly with the dose employed: in small doses diminishing the calibre of the capillaries; in larger doses, or continued too long, paralyzing the vaso-motor nerves, causing the vessels to dilate, thus producing cerebral congestion. In therapeutic doses it increases the activity of the excito-motor functions of the spinal cord, and in larger doses may even produce convulsions; but its effect (as mentioned by Dr. Amory) in this respect is intermediate between strychnia and bromide of potash, the former producing an exaltation of these functions of the cord, the latter diminishing their activity. It accelerates the action of the heart by paralyzing the terminal extremity of the pneumogastric nerve, which restrains that action.

Bromide of potash is another drug especially brought to notice by experiments on the nervous system. It is a vascular sedative, repressing local congestions of the brain or other organs. Dr. Amory declares its effects to be produced by its direct action on the bloodvessels themselves, or the nerves controlling them. Dr. J. Russell Reynolds infers that it acts as a sedative on those nerves, reducing such morbid activity as may lead to the spasmodic narrowing of the vessels. Dr. Laborde states that it produces a progressive diminution and even complete abolition of the reactionary movements of the limbs, as produced by various artificial excitations.

Digitalis is found by Dr. Brinton to induce contraction of the capillaries, and thus increase the arterial tension. It both stimu-

lates the action of the heart and increases the capillary resistance. Drs. Fagge and Stephenson consider its effect on the capillaries secondary to that on the heart. It strengthens the cardiac contractions, and at last tetanizes the heart, causing its complete stoppage, with contraction of the ventricles. Other observers, Legroux, Wunderlich and others, agreeing upon these general phenomena, think the effect on the sympathetic system the primary one.

The calabar bean, or *Physostigma venenosum*, another of the paralyzers, has also been largely experimented upon. Its effect in contracting the pupil is well known. Herman Roeber, of Berlin, believes its chief action to be a complete destruction of the motor and reflex activity of the spinal cord, at the same time producing insensibility to pain without impairing the sense of touch, or the so-called muscular sense. It also has a special power over the heart, retarding or arresting its action according to the dose. Dr. Fraser states that the chief phenomena following its use are diminished reflex excitability and an increase of the secretions. It also diminishes the number of the heart's contractions, but lessens the duration of the systole, the heart finally ceasing to beat in the diastole.

Opium and its alkaloids, as tested by Dr. Baxt, of St. Petersburg, are declared to have two characteristic actions—narcotic and tetanizing. Each of the alkaloids has one or the other of these exclusively, or a blending of the two. As narcotics they rank in the following order:—papaverine, morphine, narceine and codeine, &c. (and inversely as convulsive agents), up to thebaine, which, holding the highest place in this respect, is equal to strychnia. Papaverine and morphine act first on the peripheries of the sensory nerves, and control pain when applied locally.

Among the most interesting results of this nature are those which have been made on quinia by Drs. Binz, Scharrenbroich and Adolph Martin, tending to prove that it has a direct influence in diminishing the number of the white corpuscles in the blood, and checking their passage through the walls of the vessels—doing this by impairing the vital properties of the existing corpuscles, hindering the generation of new ones, and restraining the dilatation of the vessels. It is also proved to have an influence as an antiseptic, checking the vital movements of vibrios and other organic bodies in the secretions. Experiments on this point, carried still farther, prove that other medicines also

have a similar power on the vital movements of organic bodies, among which are alcohol, the mineral acids, the chlorides of mercury, camphor, arsenic, &c., but they are not of so general application as quinine, either from their greater poisoning qualities or their more rapid decomposition in the blood—quinine remaining unchanged in the system often for two days, and being generally so harmless even in large quantities.

The nitrate of amyl is a remedy introduced into the materia medica by Dr. B. W. Richardson, of London, from its similar power over unstripped muscle and the sympathetic system. Its action is said to be exerted on the ganglionic nervous tract; it paralyzes so that the nervous control over the minute vascular system is impaired and the muscles thrown into relaxation. Hence it is recommended as a remedy in spasmodic affections, and has been used successfully in tetanus, spasmodic angina, colic, asthma, &c.

But of all the remedies introduced into practice on theoretical grounds, none has been so generally used, or with such satisfactory results, as chloral. Three tons of it are stated to have been imported into England from Germany during the last year, and more than twenty-two thousand pounds passed through the hands of a single dealer. It was argued, on chemical grounds, that it ought to produce certain effects on the system, and it has wonderfully justified the experiment. Its clinical effects are so well known as to require no mention. It is said to contract the arterioles, and thus produce sleep by bringing about an anæmic state of the brain. Sphygmographic tracings in the sleep caused by it indicate an elevation of arterial pressure, and a perceptible chilliness and dryness of the skin of the extremities was also observed.

I have thus briefly reviewed some of the best ascertained facts with regard to several drugs, not so much attempting to present a *résumé* of all that has been discovered with regard to each, as to give some idea of the accuracy and care with which these studies have been made, and their extremely interesting results. Before these observations it would have been declared extremely improbable, if not impossible, that any one should have produced by medicine such an effect as the lessening of the supply of blood to a weak or diseased organ; but it now seems practicable not only to do this, but, for instance, to paralyze the extremities of the pneumogastric nerve without injury to the nervous

centres, to give tone to those nervous centres when failing in structure, to act upon the muscles of organic life as a whole, or over some special set of these muscles alone, and to diminish or increase the temperature of the body, an important effect of these drugs to which time has not allowed me to refer. But much of this is now as completely demonstrable as the forty-seventh problem of Euclid. Therapeutics has thus far been for the most part a merely empirical art, and medicine consequently one of the most inexact of sciences. The counting of cases, gathering of statistics, and summing up of the averages of results, have been almost the only means of judging of the effects of remedies. But when we know, as we begin to, something of the ultimate pathology of the changes wrought by certain diseases, and when we know, as we are beginning to, the real unquestioned effects of certain medicinal agents on the parts affected, a ray of light falls upon the healing art, and the practice of medicine begins to be something more than the observation of cases, begins to be the application of remedies to the prevention or removal of morbid changes. The expectant treatment, and the treatment of symptoms must yield, and be followed by the scientific appliance of remedies whose effect can be predicated to the removal of diseases, whose pathological conditions we have ascertained. Prof. Geo. Wilson used to say, as we learn from the *Edinburgh Medical Journal*, that if all the sciences related to medicine were represented by a group of boys playing at leap-frog, therapeutics would figure as a very lazy boy whom no compulsion could prevail upon to take his leap. I am inclined to think that this was because it was a game "he did not understand," and that, like the "heathen Chinese," he has at last consented to join in the play.

One of the most striking facts to be observed in this summary of the effects of drugs is their variety. The cursory observer deems the results very similar, and declares that they only prove that a certain class of drugs have a certain common effect over the nervous system; but carefully examined and analyzed they reveal a most wonderful complexity of detail. One drug manifests its power first on the muscles, and this either by direct irritation like the scratch of a pin, or by affecting the nerves that control them; another acts on the spinal cord, another on the brain; one acts on the *peripheral* extremities of certain nerves, another on their *central* origin; one acts on the heart, an-

other on the voluntary muscles; one on the motor, another on the sensory nerves. This complexity of action is still more curiously shown when we compare them with reference to their antidotal or their auxiliary action upon each other. One may directly oppose a certain effect of another and yet increase its activity in another direction. Curare and conium, very similar in many respects, differ, in the fact that the former is not poisonous when swallowed, but only when introduced under the skin; conium poisons in either way. Calabar bean stops the action of the heart by lengthening the diastole, so that the cardiac functions cease during the diastole; other drugs prolong the systole, and the heart stops in the systole. Even the different alkaloids of opium have, as we have seen, a very various action. Physostigma stimulates the third nerve, atropia the sympathetic; the former contracts the veins, the latter the arteries; antagonistic in their effects on the pupil, they are not so in their action on muscular life, both being paralyzers; but atropia acts by destroying muscular irritability, physostigma by paralyzing the spinal cord; atropia destroys, physostigma increases the sensibility of the sensory nerves. Atropia increases, physostigma retards the respiratory movements; the former produces excitation of the cardiac ganglia, the latter paralyzes them.

Atropia differs also from other vascular remedies. In contracting the muscular fibres of arteries, it stimulates the flow of blood in the organs and assists their functions, and may even produce active congestion. Nicotine produces a lasting spasm of the vessels, which is followed by dilatation only when the nervous power is exhausted; and bromide of potass. causes a permanent contraction and anæmia of organs, its action being more intense and longer in proportion to the amount given.

The relations of opium, belladonna, conium and hyoscyamus to each other have been fully described by Dr. Jno. Harley, too fully to admit of being curtailed for our use, but showing how the effects of either are modified by being given with another, and how difficult if not impossible it is to neutralize all the effects of one by what seem to be the opposing effects of another.

From his studies and those of Drs. Crum-Brown and Frazer, of Edinburgh, it is shown that the action of two or more drugs, given in a combined form, is in many instances not a combination of the effects of those drugs; that is to say, the effect of one plus that of the other, but is often

markedly different. These gentlemen experimented upon strychnia, atropia, conia, and their bases, and discovered that when joined with compounds of ethyl or methyl their effects were strangely changed. Thus, strychnia affects the spinal cord itself, producing more or less tetanic convulsions, but when converted into its ethyl or methyl compounds it produces paralysis of the terminal ends of the nerves. Atropia causes not merely paralysis but spasms, partly clonic and partly tetanic, while the compound of iodide of methyl with atropia prevents the occurrence of the spasms, but is far more deadly in its poisonous qualities. So conia, in its normal state, is said to have no spinal action, but the hydro-chlorate of methyl conia paralyzes the motor nerves and spinal cord, and produces death much more quickly than the conia from which it was prepared; while the iodide of di-methyl conia was found less active than either, and entirely devoid of spasmodic and spinal paralyzing action. These researches, says a reviewer, open to us a new field of inquiry, so unexpected are the facts developed. "How could we anticipate, for instance, that the addition of such substances as ethyl or methyl to a powerfully poisonous alkaloid like atropia would eliminate all the convulsive and tetanizing force of the latter; and even if we could suppose that, how could we suppose that the lethal activity of the alkaloid would be simultaneously increased to a very great extent? And again, the observations on the relative effects of a large and small dose of a drug, and the exact reversal of these effects when combined with methyl. Thus are we warned against the hasty generalization so common, viz., the assumption of complete antagonism between two drugs which oppose each other in certain striking particulars, and the assumption that small doses of a drug must produce effects which are a faithful reproduction in miniature of the action of large ones." Now all these results, although they teach us how limited is our knowledge of the actual and intimate resources of these drugs, show us plainly that their powers have not been over-rated, and that we have in the armamentarium of the materia medica, not the Queen's arm and old Columbiad merely of obsolete days, but modern weapons of every variety, adapted to the most complicated emergencies of modern warfare, or modern pathology. Polypharmacy, so often abused, becomes a matter to be studied in both its senses, either as the employment of very many kinds of different single drugs in different pathologi-

cal conditions, or the employment of combinations of drugs, when we know more, as we soon may, of their modification of each other's action.

In conclusion, then, to sum up what seems to be taught by the recent advances in medicine, on germs, spores or other organisms in the causation of disease—on the pathology of inflammation and the transudation of the white corpuscles of the blood through the walls of the vessels, their multiplication and abundant reproduction in various pathological states; on the influence of the ganglionic system over oligæmia and hyperæmia of various organs; and the phenomena produced by the exhibition of various well-known drugs, is this:—that we can, by well-known antiseptics, destroy in the air or elsewhere these parasites, thus preventing their entrance into the human system; that we can by drugs, as proved by the experiments of Binz and others, directly check the zymotic process in the blood, and the vital movements of these organisms; that we can also arrest the inflammatory process by checking the migration of the leucocytes, or white corpuscles, through the vessel-walls into the tissues of the membranous and parenchymatous organs; that we can lessen the number of these leucocytes, and can also relieve anæmia or congestion of organs, and the various organic changes which follow the narrowing, dilatation or rupture of the capillary arteries. All this we can, or seem likely to be able to do by the direct action of drugs, the wonderful complexity and hitherto unknown variety of whose resources we have also briefly shown.

These advances, then, seem to place in our hands, if we are but willing and skilled to use them, the power of modifying to a very great extent the vital functions, and indicate a tide of progress that will one day sweep away that superstitious fear of interfering with the resources of nature, which has allowed so many to perish unaided by those into whose hands they had so trustfully placed their lives. While our clinical experience was denounced as untrustworthy, and every recovery ascribed to a process of Nature, while we could do nothing to prove to the skeptical that remedies had a capacity to do that which we desired, it may have been that our first duty was to do no harm. When we know, as we are likely to, with a great degree of certainty, the organs, or the minute anatomical parts, that will be altered functionally or otherwise by our remedies, then, although he may still be a great physician who is great

in diagnosis, he will be still greater who, having made his diagnosis, knows what remedy or what combination of remedies to use to remove the diseased state.

One other matter to which I wish barely to allude in passing is this, that what has been called the empirical use of drugs, and that which we had *assumed* that we knew of them by clinical experience, has not been subverted by these advances in knowledge. The belief that certain old-fashioned remedies "are good for" various diseases, some for asthma, some for malarial disease, some for epilepsy, &c. &c., has been for the most part justified, and confirmed by an increased knowledge of their action; and it seems probable that we shall finally have not merely an excuse for our belief, but valid grounds on which it may rest. The present indications of these results are that it will be shown that the men were right who gave certain drugs to cure certain diseases, and they wrong who laughed at their credulity and declared their treatment was nothing if not injurious.

It need not be claimed that this is already accomplished, that these results are lying completed before us. Many of these researches are incomplete, some are even conjectural; I speak only of them as indicating in their *unfinished* state what they may hereafter *prove*, namely: that the practice of medicine is not merely a philosophical study into the causes, progress, and result of diseases, under the most favorable conditions of hygiene, diet, and nursing, but is all this plus the use of remedies to modify, to arrest, or to prevent the changes that disease works; and that the tendency of modern scientific research and discovery in medicine is not to *limit* curative agencies and remedial appliances, but to *multiply* them—not to prove that disease is to be watched, to be guided into safer paths merely, but to a certain and large extent is to be treated and cured; and that drugs which, with one or two exceptions, were to be thrown into the sea, that fishes and not men might be hurt by them, are to be administered, and made use of, with their almost infinite variety of powers, in the care, the relief, and the cure of the sick.

**HEROIC MEDICAL STUDENTS.**—It is worthy of record that the fine old cathedral of Notre-Dame was saved only by the courage and perseverance of a handful of medical students from the Hôtel Dieu, who frustrated the incendiary efforts of the Communists.

## Reports of Medical Societies.

SELECTIONS FROM THE RECORDS OF THE OBSTETRICAL SOCIETY OF BOSTON.  
SECRETARY, D. F. LINCOLN, M.D.

OCTOBER 8th, 1870.—Dr. Read, Vice-President, in the chair. Fourteen members present.

Dr. Lincoln read a paper entitled "Medical Notes on the Aborigines of Alaska," based upon statements furnished him by Mr. W. H. Dall. (See this Journal, Vol. VI., p. 353.)

Dr. Cotting exhibited Braithwaite's short forceps, which are so constructed, that the whole is compactly stowed, and easily carried in the pocket.

Dr. Parks quoted Barnes's view of the superiority of the long forceps in all situations of the head.

Dr. Ayer agreed with him, saying he never had success with the short forceps. He further mentioned the case of a large fat woman, whose labor was impeded by the child's head passing forwards over the brim of the pelvis at each pain, instead of downwards; the difficulty was remedied by the nurse pressing upon the protuberance over the pubes. A sheet, drawn tightly over the belly at the moment of each pain, he regarded a useful aid to labor.

Dr. Cotting had used the latter expedient many times. He was accustomed to fold the sheet in four thicknesses, pass it around the belly and tighten moderately by twisting it behind the back, during the pains, regulating the degree of tightness by reference to the degree of relief felt by the woman. Generally, he should say, it gave great relief and hastened the close of labor.

Dr. Lyman described a case of presentation of the hip, which had been mistaken for one of the head. The child was delivered by manipulation, forceps being used to extricate the head.

Dr. Abbot, in reference to the common expression, "impacted head," questioned whether, with a normal presentation, there is such a thing as a complete impaction in the superior strait, so that the head cannot recede or be moved by the hand in the interval of pains.

Dr. Putnam thought he had seen such a case, probably a consequence of narrowing of the antero-posterior diameter.

Dr. Parks observed that Murphy reserves

craniotomy for this class of cases, excluding the forceps as quite inadmissible in such circumstances.

Dr. Abbot believed, in opposition to Murphy, that the forceps were a proper remedy for so-called "impaction."

Dr. Lyman had seen a case of face presentation in consultation where the head had been absolutely immovable for 24 hours. The strength of the patient and the condition of the vagina continuing good, it was thought best not to interfere, and the child was finally born after a two days labor, without rupture of the perineum and the mother making a good recovery. Had the case been seen earlier, possibly manual interference or the forceps would have been advisable.

Dr. Putnam remarked that, in his opinion, in a case of positive arrest of the head it was important to resort to the forceps before the soft parts should become swollen, and thereby increase the difficulty. Traction, aided by some diminution of the size of the head by forceps, would probably be successful.

He thought the danger of vesico-vaginal fistula under these circumstances arose not from the forceps, but from unremitting pressure of the head upon the soft parts.

Dr. Lyman and other members coincided in this opinion.

Dr. Reynolds agreed strongly with those gentlemen who had denied that the forceps frequently cause vesico-vaginal fistula; he thought the delay of the head in the passage is the prominent cause, through the long-continued pressure exerted. He had never seen the impaction which was under discussion. He entered a strong caution against the teaching of Murphy, Rambotham, and that class of obstetric writers, upon this point.

Dr. Abbot had lately had two forceps-cases, both in primiparae, where the blades of the instrument were applied directly over the ears of the child, the head being in the superior strait with the forehead towards the pubes. One child lived; the other was extracted with great difficulty, dead. He instanced them as showing that the head sometimes lies in the antero-posterior direction, though he was far from conceding the truth of Dr. Cotting's view that such is the normal position.

Dr. Reynolds advised, in case the head assumed such a position, to give it one-eighth of a turn with the vectis or forceps before trying to bring it through. In the worse position, that of the forehead to pubes, it is the more necessary to try this



manceuvre. If this be neglected, there is danger of crushing in the forehead against the pubes, as once happened to himself.

He alluded to two successive labors of a patient under his care. In the former labor, a friend of great experience and skill as well as himself had failed with the forceps; version by the foot had to be performed, and the child was born dead. But a year later another child of the same woman was born without difficulty, the head assuming the left occipito-acetabular position. While the head was strongly compressed in the excavation, the edge of the left parietal covered the edge of the right for quarter of an inch; hence he inferred the presence of some deformity at the brim, although none was detected.

*Frontal bone deeply indented during labor—Relieved by Operation.*—Dr. Sinclair reported the case. Three months before he had attended a pluripara, whom he found in full labor on his arrival, the pains being exceedingly strong. The forehead was against the pubes, and the child was not advancing. The pains becoming so severe and continuous as to excite apprehension of a rupture of the uterus, he applied the forceps without difficulty, and delivery was soon effected. When the fœtus came to light, it bore an indentation upon the right frontal bone, nearly two inches long and three-fourths of an inch in depth. The marks of the forceps were over the left temporal and the right parietal bones. Comparatively little force had been used in extraction. The disfigurement was so shocking that the child's father declared he would rather it should die than grow up with such a mark; and he gave full sanction to any operation proposed for its relief.

"I should hardly have dared," said Dr. Sinclair, "to perform the only practicable operation, one so apparently hazardous to life, if I had not recalled at the moment a suggestion made by some author writing on a similar subject, which I had recently read, and which relieved me from the responsibility, at least of being the first to practise a most dangerous procedure." As no external pressure produced any effect, an incision was made through the scalp near the anterior fontanel; into which an elevator was introduced and passed through the frontal suture, between the dura mater and frontal bone, to the point of depression. After three ineffectual efforts the depressed bone was raised to its normal position. Water-dressing was applied, and the child recovered perfectly. It was worthy of remark, that the skin was not ecchymosed at

the place of depression. In reply to a question, Dr. Sinclair said that no examination was made to ascertain the presence of an exostosis in the mother's pelvis, which might account for the indentation. It is certain, however, that it was not produced by the forceps, as the marks left by this instrument were in a quite different position.

*Miscarriage with Twins; one being fully developed, the other blighted.*—Dr. Read reported the case. Mrs. U—, of very nervous temperament, who had been in delicate health during the whole of her pregnancy, suffering from diarrhoea, dysentery, &c., was taken in labor after a fatiguing walk on the 15th of August, 1870. Delivery took place early on the morning of the 18th. The first child was of good size, apparently well nourished, but much decomposed. The placenta came away with it. On making an examination a mass was found in the vagina which proved to be a second fœtus about three inches long and flattened out. The placenta was attached by the cord, and was about the size of a half dollar. It was not decomposed, but seemed to be changed into a leathery semicartilaginous substance, as if, like the fœtus, it had been subjected to strong pressure. The date of Mrs. U.'s last menstruation was Feb. 18th, 1870; the pregnancy had therefore gone on just six months reckoning to the day of delivery.

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## Bibliographical Notices.

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*Handy Book of the Treatment of Women's and Children's Diseases, according to the Vienna School, with Prescriptions.* By Dr. EMIL DILLINGER. Translated from the second German edition by Patrick Nicol, M.B.: Lindsay & Blakiston, 1871. Pp. xii., 244.

A GENERATION in medicine whose methods of study and of practice are to a considerable degree influenced by German ideas, and which regards the teachings of Niemeyer, of Billroth and of Virchow as authoritative, will gladly welcome any published expression of the scientific views which prevail at the schools of Vienna and Berlin. This little work of Dr. Dillinger is especially opportune, consisting as it does of an epitome of the methods of treatment generally adopted by the Vienna School, in diseases of women and children. The chief fault one is apt to find with this work lies in its brevity; it is a complete synopsis of thera-

peusis, but it is little more than a synopsis. That the work however is done admirably as well as concisely, is continually evident to the reader. Those who have personally enjoyed the advantages of study at Vienna, will find this manual a pleasant means of recalling their sojourn abroad; while others, less favored, will be glad to peruse a connected conspectus of the methods of Braun, of Skoda, of Schuh and others. In addition to the subjects usually treated in works on women's diseases, this comprehensive handy book includes the diseases of pregnancy and of the parturient state. An abundant compilation of formulæ adds to the practical value of the book.

The translation appears to have been done by Mr. Nicol with signal success. There is a noteworthy absence of idiomatic expressions, a feature in translating difficult to attain except with great care and an intimate knowledge of the language. Mr. Nicol has moreover added considerable valuable matter in the form of explanatory and comparative foot-notes, and by an appendix presenting a concise review of the practice of the British school in the departments treated of.

D.

*Standard Supply Table of the Medical Department of the United States Army.* Washington. 1871.

This is the usual circular issued from the Surgeon General's office for the Medical Staff of the Army. We notice, as evidence that our army is keeping pace in medical matters with the profession in civil life, the supply of articles for scientific investigation and treatment of disease. The army surgeon of the present day, if he has a laudable desire to keep up with the standard of the day, if he wish to use calabarized gelatine, a medical thermometer, or a Nélaton's probe, need not charge such articles to the account of "chickens" or "eggs" on the hospital fund, as was occasionally necessary during our own army experience.

*Publications of the Massachusetts Homœopathic Society, from 1840 to 1861.* Volume I. Taunton. 1871.

We find on our table a record of the first twenty years of the existence of the Massachusetts Homœopathic Medical Society, and of the present status of those calling themselves Homœopathic practitioners. We open first upon a life of Hahnemann; then follow addresses delivered at various times by members of the Society, giving the

history of the introduction of Homœopathy to America, with brief notices of all the Homœopathic physicians now in the State; the history of the Homœopathic Society and records of its meetings; the Hospital, the Dispensary, &c.; and Reports of Cases in which the terms Bryonia 4th, Calcarea 200th, Nux 1000th, indicate the potent (?) medicines employed for rheumatic carditis, hæmorrhoids and other ills to which flesh is heir. To those interested in the history of the different forms of medical practice, which have from time to time moved men's minds, we think the volume before us will prove interesting; as well as to those who retain faith in what is called Homœopathy. To such we commend it for perusal.

*Opium and the Opium Appetite; with Notices of Alcoholic Beverages, Cannabis Indica, Tobacco and Cocoa, and Tea and Coffee, in their Hygienic Aspects and Pathological Relations.* By ALONZO CALKINS, M.D. Philadelphia. J. B. LIPPINCOTT, & Co. 1871. Pp. 390.

THE author of this semi-professional, semi-popular book undoubtedly had an object in placing it before the Profession; but what it is, we are at a loss to say. It is too far from the professional standard and contains too little new material, to render it valuable to physicians; it is too dull and prosy ever to attract the attention of the general public. It is, in fact, a collection of data and facts, of incidents and adventures, a compilation of every one's thoughts, views and feelings concerning opium in every phase, and thoroughly *ad nauseam*.

Although the work may not be of great value either to the general, professional or lay public, certainly, so far as it goes, it will prove interesting to one who is searching up the history or the literature of the subject of which it treats.

TURPENTINE AND PHOSPHORUS.—MM. Höbner and Schimpf have reported in the *Berliner Med. Wochenschrift* that they have repeated the experiments of Personne with the following results:—Commercial oil of turpentine is a good antidote to poisoning by phosphorus. There is no fatty degeneration of the tissues, nor is there any free phosphorus found in the system of the animals experimented on. Phosphorus and turpentine oil form in the stomach a compound resembling spermaceti, which is readily excreted.—*Med. and Surg. Journal.*

## Medical and Surgical Journal.

BOSTON: THURSDAY, AUGUST 24, 1871.

### THE CHILDREN.

WHAT will become of the world when the innocence, the young life, the joy and the sparkle of infancy are crushed out of it by the follies and absurdities of fashionable life? In every city, in every town throughout the land, the physician more than any other, by the nature of his calling, has the frailties of humanity laid open before him. It is, however, only by the physicians of the larger cities that the shocking barbarity is seen which is alluded to in a recent number of the *New York Tribune*, and which we copy in full. The sudden growth in riches, the changes and increased laxness in public sentiment, are playing sad havoc on the morals as well as the physical condition of certain classes of our people.

May we not, as a profession, as the home advisers in the families of the land, utter our solemn protest against the enormities of fashionable life so far as they affect the innocence of childhood, so far as they imperil the moral condition of the young, as well as plant the seeds of physical disease and life-suffering.

We gladly copy in full the excellent remarks of the *Tribune*, to which our attention has been called.

"Children's hops, our fashionable exchanges assure us, are the most noticeable feature this year at Long Branch and Cape May. The dress, diamonds, &c., of the four and five year old belles are described, and their flirtations criticized. 'These festivities are usually continued into the "wee sma' hours," we are told, 'and in costliness of apparel, in conversation and manner, the balls of the young folks are exact reproductions of those of their elders.' Of course. There are some inevitable evils in this world to which one grows hardened if not reconciled, and one of them is the certainty that men and women who are silly and shallow, who from choice direct their lives to the meanest of ends, will bring forth children from their cradles weak, shallow, and small natured. Blood tells; so does

the home atmosphere: after these, outside influences are but obscure and meagre.

Now, in the name of health and common sense, there is no reason why children should not dance in proper times and places, or acquire insensibly as the air they breathe the habits and language of well-bred people; but these lilliputian balls in city or watering places are among the most significant signs of the slow corruption of our fashionable social life. If there is any remnant of reason or right feeling left in a woman, it will come to the light in behalf of her offspring, and the mother who can subject her little child to the heat, indigestion, and impure influences of a midnight ball, where the wretched little actors ape the dress, the absurdities, and even the passions of their elders, must have lost all her womanly nature in the weakest of vanities. We need scarcely say that the children of really cultivated people are not found in these pitiable exhibitions. The European idea of education grows each year into favor in the best American society; and the aim for the first five years of a child's life is to make of it a thoroughly developed, well-matured animal; after that a degree of seclusion, with careful training, especially in the case of girls, fits them for their places in life. In no instance should an effort be made to constitute the body of a child a lay figure to display its mother's dress and diamonds, or to develop in its immature clean nature the weaknesses and passions of mature age.

"There will be children's balls to the end, we suppose. In the world there must be a place for weak men and vulgar women, just as there is use apparently for gnats or reptiles. We know quite well that so far as our half-educated fashionables are concerned, our gravest remonstrance would be useless. But there is a large class—in fact, the largest class in our society—to whom it is always worth while to speak. We mean the mechanics and tradespeople, who, with a weight of common sense on their side, and feeling every year the comfort and power of an increasing income, are yet too apt to imitate in their habits and creed of life these very shallow fashionable people, instead of a more refined class. Why not make of this summer leisure preëminently a children's holiday? Whether you quit work, as most of you do, for a day or a week, make the children your chief aim. It is a rare chance for an American father to become acquainted with his boys and girls. You have something more

to do for them than to earn bread and butter, or a roof of your own to cover them. Quit the shop and go with them to the seaside or the country for a breathing spell, and try to find out what that something is. If you have keen eyes and common sense you will discover better there than at home that the child whom God has given you was meant to be neither a dancing, flirting caricature of human nature, nor a dull drudge, and that it rests with you to give it its destiny."

**INFLUENCE OF THE CALIFORNIA VINTAGE ON THE AMERICAN MEDICAL ASSOCIATION.**—Our cotemporary, the *Pacific Medical and Surgical Journal*, in its issue for July, gives its authority to the statement that the convention of the American Medical Association was a strictly decorous and harmonious gathering; that the proceedings, in the way of scientific papers and discussions, were of an interesting and valuable character, but that, unfortunately, nothing found its way into the professional and secular press but the wrangling and business debate; that the conduct of the members was of the most gentlemanly character; "the exception occurred at the only session which was held at night, and was manifestly due to California champagne, which some of the delegates had been sampling at the Oakland entertainment, supposing it to be as tame and inanimate as the champagne to which they had been accustomed elsewhere."

The account of our brother of the Occident is sadly at variance with the accounts we have received from members present, as well as from our exchanges, both lay and professional.

In an elaborate article, recently contributed to the *American Journal of Syphilography and Dermatology*, Dr. Swerchewsky describes and analyzes the physiological and pathological elements on which the formation of scars in the skin depends. The law by which the same injury, as the prick of an awl, assumes, in healing, a variety of forms corresponding with the situation of the wound, is denominated cleavage, and it depends on the forces which act in the skin, or, in other words, on the tension of the "tissue bundles." This tension depends in turn on a

variety of elements, direct and indirect, mechanical and vital. By a series of experiments performed on dogs, in some of which there was a simple puncture of the skin without loss of substance, and, in others, a wound by means of a hollow steel cylinder, with a sharpened edge, the laws of cleavage were carefully studied. The wounds were made so as to present a variety of relations to the directions of the tension in the skin. It was found that the form assumed by the fresh wound became gradually modified as healing progressed, the change developing according to the various conditions of rest and motion in the animal, or to those belonging essentially to the "clefts" of the skin and their relation to the wound. Thus, a simple puncture assumed an elongated form, a round wound became an ellipse; and these in the process of cicatrization took other shapes. The form of the scars from a simple cut, without loss of substance, depends on the direction of the cut, more scar-tissue being required when the wound is made in a perpendicular direction to the normal tension than when it is parallel. It will be readily seen that if attention is paid to these laws of cleavage in the skin, much practical advantage may be gained in surgery and unsightly scars avoided by a little calculation in making incisions.

**THE PREPARATION OF THEINE.**—In the *Medical Times and Gazette* Mr. Lewis Thompson publishes an article entitled "Use of Theine as a Therapeutical Agent," reprinted in the *Druggists' Circular* for June, p. 96, in which he described a convenient method for the preparation of this agent; but the writer found the hollow and movable axis of the rotary coffee roaster rather awkward, besides its length of three feet much too short to insure the deposition of all the crystallizable particles of the vapor given out by two pounds of coffee. The complete utilization of that amount of vapor would require a tube (being one inch in diameter) nine to twelve feet in length, and even longer. To obviate these disadvantages, recourse was had to a little stationary arrangement. It consists in a Linden's patent coffee-roaster, a thin cast-iron pot, whose contents may be turned over by a perforated and toothed shovel. To the cover a tube of two inches in diameter was

fitted, the whole length of which is three feet, made in three sections, for convenient removal and cleaning. Put on a stove and heat the pot to between 300° and 400°, then turn in the coffee, fit on the cover and pipe, passing the free end of the latter through a card board into a gallon bottle, then raise and continue the heat for fifteen or twenty minutes, during which time the crank must be turned, and the cover now and then raised to examine the color of the beans, though this is not necessary after two or three repetitions of the process, when the cover may be luted on by a cement made with a little water out of two parts of linseed meal and one part plaster of Paris; besides, with a brisk fire the operation of roasting requires but ten minutes, when the coffee will have assumed the right shade of color. During the process the tube and the bottle grow rather hot, and it is advantageous to cool them by wet rags, but it is not absolutely necessary. The aqueous portion of the vapor condenses in the bottle to the amount of two ounces, and upon removal of the cover and tube, they will be found coated with a thin film, which is washed off by eight ounces of distilled water, with which the bottle is also well rinsed; then the liquid is filtered and evaporated over a water bath to two ounces; to these, two ounces of dried carbonate of potassa is added (very easily made by exsiccating 2½ ounces of salt of tartar in an iron ladle [fitted with a cover], one of three inches diameter by one inch depth is large enough, or a Hessian crucible will answer very well), the mixture set aside over night to allow the precipitate of theine to form. If the alkaline solution is very concentrated the precipitate will collect on the surface, but on adding a little water it will subside; the supernatant liquid is then decanted, the deposit redissolved in distilled water, evaporated over a water bath to dryness, and finally crystallized from a boiling solution in alcohol, which is distilled off and allowed to evaporate.

Theine obtained in this way is sufficiently pure for medicinal use. Two pounds of Rio coffee yielded 104 grains. It seems strange that the decided therapeutic value of this agent has thus far failed to bring it into more general use by the profession.

The above arrangement is not expensive, costing two dollars and a half, and is also useful for some similar purposes, such as the preparation of *baccæ juniperi tostæ*, *et glandes quercus tostæ*, &c., in fact, for the torrefaction or incineration of many organic substances. A domestic process such

as this, of almost weekly occurrence in every family, is thus turned into an interesting and profitable pharmaceutical operation.—CHAS. FREDRICK, of Chicago, in *The Pharmacist and Chemical Record*.

**OBSERVATIONS ON LIGATURE OF THE SUBCLAVIAN ARTERY—A NEW INCISION SUGGESTED.** By Assistant-Surgeon F. P. STAPLES, Medical Staff.—That ligature of the subclavian artery on the living subject is not an easy operation, even in the hands of the most experienced surgeons, few will question, while, on the dead body, there is no doubt that most surgeons have seen attempts to occlude that vessel fraught with considerable difficulty, if not with actual unsuccess. To assert such truisms, however, is not my object in writing, but to bring before the notice of surgeons a method which I have practised for some time, and by which, I venture to hope, the difficulties of ligaturing that vessel in the third stage can be overcome.

**Operation.**—The patient being placed in the usual position, with his head back and to the opposite side, with his shoulder depressed slightly, but not violently, let the point of the knife be entered at the posterior edge of the sterno-mastoid muscle, one inch and a quarter above the superior margin of the clavicle, and let an incision be carried from that point, in a straight line, to within a quarter of an inch of the attachment of the trapezius to that bone, dividing skin and platysma. This incision should be a little short of three inches. The operator should then lay aside his knife, ligature the external jugular vein in two places, and divide it in the direction of the original incision. The deep cervical fascia should now be divided, and the edges of the wound gently separated, when the posterior belly of the omo-hyoid muscle will be exposed for its entire length. The edges of the wound should now be retracted, and the superior retractor should carry with it the omo-hyoideus; and when this has been done, the white cords of the plexus, with the artery inferior and internal to them, will be observed to occupy the bottom of the wound. The knife should now be laid aside, unless it is necessary to dissect a lymphatic gland out of the way, and the vessel separated from the lowest cord of the plexus with a director, and ligatured in the usual manner. Tying the external jugular vein is not insisted upon, provided it can be easily drawn aside, but generally a ligature would expedite matters, and any



branches of this vein which cross the line of incision should, if divided, be treated in the same manner.

What are the advantages claimed for the operation recommended? Why have the stereotyped guides to the artery—viz., edge of anterior scalenus, and tubercle on first rib—not been mentioned? What special advantages has the operation described over that commonly practised—i. e., by incision along or near upper margin of clavicle?

The advantages claimed for the operation are—1. That the incision is parallel to the normal course of the artery. 2. That the true guide to the vessel—posterior belly of omo-hyoid—is exposed by incision recommended for its entire length. 3. That the edges of incision admit of easy retraction, and, in this way, of easy access to the vessel. 4. That the risk of venous hæmorrhage obscuring the final steps of the operation is lessened.

My answer to the second question I have asked is very simple. To feel the edge of the scalenus anticus in a bleeding wound is next to, if not quite, an impossibility, and it does not follow that the tubercle on the first rib is always so well developed as to permit of recognition by the sense of touch; and, independently of both these surgical signposts, it has always appeared to me that a far more reliable guide is to be found in the omo-hyoideus.

Regarding the third question—What special advantages are claimed for this operation over that commonly practised?—it may be stated, I think, that, if an incision is made in a line with the clavicle, it is obvious that, when carried deeper, it will not meet with omo-hyoideus or true guide unless at its outer angle; whereas the incision recommended is parallel to that muscle throughout its entire length. Secondly, in the wound resulting from the ordinarily used incision, retraction can only be made in an upward direction, as the clavicle prevents retraction downwards; whereas, with the incision now recommended, retraction can be made in both directions. Thirdly, in the incision recommended there is no risk of dividing the transverse cervical vessels; whereas, when the incision along the clavicle is used, they are often cut, and, when it so happens, very troublesome bleeding obscures the further steps of the operation.—*Lond. Med. Times and Gazette.*

**CONTRACTILE GLAND-CELLS OF THE SKIN OF THE FROG.**—The following are the results of the observations of Dr. Engelmann on this subject (*The Academy*, April 15, 1871, from

Pflüger's *Archiv für Physiologie*, January, 1871). Contractile glands are very numerous, and are distributed over the whole surface of the skin of the frog. They are distinctly contractile under nervous excitation, and are composed of basement membrane with a lining of cells, which are arranged in two layers—an external, flat, and probably contractile layer, and an internal layer of more cubical form. The two layers are not very readily separable from each other. Prof. E. found that momentary mechanic or electric excitation of the distal extremity of the divided nerve causes temporary contraction of the glands of the hind feet, which attained its maximum in from half a second to five seconds. If the shocks be repeated with sufficient frequency, the glands, or rather the gland cells, appear to pass into a state of tetanus, and they then assume a cloudy appearance. Independently of direct excitation, the contraction of the gland-cells may be called into play reflectorally, as by irritation of the nerves of various parts of the body. The reflex irritation is conducted centripetally through the posterior, centrifugally through the anterior roots of the spinal cord. The activity of the motor nerves is not abolished by woorara.—*Phil. Med. Times.*

**INCREMATION ON A LARGE SCALE.**—The commission appointed by the Belgian government to disinfect the battlefields around Sedan have resorted to incrimation. According to the *British Medical Journal*, the burial-trenches having been carefully laid open, a considerable quantity of tar was pumped in; and, when this had infiltrated the mass, petroleum oil was poured in. This was set fire to, and light wood thrown on the flames to make the combustion more active. At the end of three hours nothing but a mass of calcined bones remained. During the morning, chlorine gas was set free in large quantities; and the workmen declare that not the faintest cadaveric odor was perceptible. Finally, the calcined debris were covered thickly with dry chloride of lime, and the trenches heaped with earth mixed with quicklime.—*New York Medical Journal.*

**RIGID OS UTERI.**—A quarter of a grain of morphia hypodermically injected in cases of tedious labor from rigid os uteri, has the effect of producing rapid dilatation, in addition to its soothing effects upon the worn out and suffering system generally.—*Virginia Clinical Record.*

## Medical Miscellany.

**CORRECTION.**—In our last issue, we announced that Dr. Sinclair had resigned the position of Attending Physician at the Boston City Hospital; we are gratified to learn that, in this statement, we were mistaken, and that he still retains his position on the medical staff of the institution.

**REQUEST.**—Will our valued cotemporary, *The Dublin Medical Press*, oblige us, in quoting from our columns and in addressing us, to add "U.S.," in order to prevent delays and mistakes.

**APPOINTMENT.**—Prof. Henry S. Cheever, of the University of Michigan, and one of the Editors of the *Michigan University Medical Journal*, has been elected to the chair of Physiology and Microscopic Anatomy in the Long Island College Hospital, Brooklyn, N. Y.

**THE DRUGGISTS' BOARD OF EXAMINERS** in New York are actively engaged in the prosecution of their duties, in spite of the opposition of apothecaries. An average of twenty-one pharmacists are examined daily, about one third of whom are rejected. An opportunity is given the latter class to read up and try again.

**WRITE YOUR PRESCRIPTIONS IN PLAIN ENGLISH.**—The best commentary we have seen on the popular outcry against the use of Latin, or scientific names for medicines, is contained in a current newspaper article, attributing extraordinary virtues to the *Hydrastis canadensis* as a cure for smallpox. As to the plant, it is probably as good as the *sarracenia*. But the point of the article is the statement that "the plant is popularly called orange root, and sometimes yellow puccoon, but it must not be confounded with another plant commonly called puccoon."—*Pacific Medical and Surgical Journal*.

**HEALTH AND THE SPECTROSCOPE.**—An ingenious use of the spectrum analysis appears, by the *Quarterly Journal of Science*, to have been made. The case referred to is substantially as follows:—The water used by the inhabitants of a crowded court, amongst whom several cases of typhoid fever had appeared, was drawn from a rather shallow well, and was highly charged with various unoxidized compounds of nitrogen. It was suspected that, from some defect, the contents of a public urinal obtained entrance to the well. The fact that the well-water contained seven times as much common salt as the normal water of the vicinity, was some confirmation of the suspicion. Professor Church obtained absolute proof by the following method:—He introduced two grammes of a lithium salt into the urinal, and two hours later was enabled readily to detect with the spectroscope the presence of lithium in a litre of the well-water, which by previous examination had shown no trace of this substance.—*Lond. Med. Times and Gazette*.

**SULPHATE OF NICKEL IN NEURALGIA.**—A case of obstinate neuralgia is related, which was cured by sulphate of nickel, in doses of half a grain

three times a day. At the end of a week one grain was given. Its relative action was speedily manifested in reducing the pulse and procuring sleep; all the symptoms of the paroxysm disappeared.—*Oregon Med. and Surg. Reporter*.

**A MEMORIAL TO PROF. OPFOLZER.**—The subscriptions for a monument of the late Professor Oppolzer already amount to 4,130 florins, or over \$2,000.

**TO CORRESPONDENTS.**—Communications accepted.—Unpaid Medical Services.—A Case in Private Practice.

**BOOKS AND PAMPHLETS RECEIVED.**—The Antiseptic System, a Treatise on Carbolic Acid and its Compounds, with Inquiries into the Germ Theories of Fermentation, Putrefaction and Infection; and the Practical Application of Antiseptics, especially in Medicine and Surgery. By A. E. Sanson, M.D., M.R.C.P., &c. Philadelphia: J. B. Lippincott & Co. 1871. Pp. 246.—On Bone Setting (so called) and its Relation to the Treatment of Joints crippled by Injury, Rheumatism, Inflammation, &c. By Wharton P. Hood, M.D., M.R.C.S. London and New York: Macmillan & Co. 1871. Pp. 156.—Practical Midwifery and Obstetrics, including Anæsthetics. By John Tanner, M.D., M.R.C.P., &c. Philadelphia: J. B. Lippincott & Co. 1871. Pp. 237.—The Public Medical Libraries of Philadelphia. By Richard J. Dunglison, M.D. Pp. 46.—Transactions of the Minnesota State Medical Society, 1871. Pp. 63.—Reports of the Board of Visitors, Trustees, Treasurer and Superintendent of the New Hampshire Asylum for the Insane. 1871. Pp. 32.

**MARRIED.**—At Lynnfield Centre, 13th inst. Dr. B. F. Clough, of Worcester, to Miss Adella J. Perkins, of Lynnfield Centre.

**Deaths in fourteen Cities and Towns of Massachusetts for the week ending August 19, 1871.**

| Cities and Towns.     | No. of Deaths. | Prevalent Diseases.            |
|-----------------------|----------------|--------------------------------|
| Boston . . . . .      | 141            | Cholera infantum . . . 77      |
| Charlestown . . . . . | 8              | Consumption . . . . . 34       |
| Worcester . . . . .   | 34             | Dysentery & Diarrhoea . . . 13 |
| Lowell . . . . .      | 34             | Typhoid fever . . . . . 12     |
| Milford . . . . .     | 6              | Scarlet fever . . . . . 6      |
| Chelsea . . . . .     | 10             | Croup and Diphtheria . . . 6   |
| Cambridge . . . . .   | 27             |                                |
| Lawrence . . . . .    | 9              |                                |
| Lynn . . . . .        | 18             |                                |
| Fitchburg . . . . .   | 4              |                                |
| Newburyport . . . . . | 3              |                                |
| Somerville . . . . .  | 3              |                                |
| Fall River . . . . .  | 12             |                                |
| Haverhill . . . . .   | 5              |                                |
|                       | 314            |                                |

Lowell reports thirteen deaths from smallpox.

GEORGE DERRY, M.D.,  
Secretary of State Board of Health.

**DEATHS IN BOSTON** for the week ending Saturday, August 19th, 141. Males, 69; females, 72. Accident, 3; apoplexy, 1; asthma, 1; inflammation of the bowels, 1; disease of the bowels, 3; bronchitis, 2; congestion of the brain, 1; disease of the brain, 4; cancer, 1; cholera, 1; cholera infantum, 39; cholera morbus, 3; consumption, 16; convulsions, 3; cyanosis, 1; debility, 3; diarrhoea, 7; dropsy, 2; dropsy of brain, 2; dysentery, 3; scarlet fever, 2; typhoid fever, 6; bilious fever, 1; disease of the heart, 4; disease of the kidneys, 2; inflammation of the lungs, 2; marasmus, 9; old age, 3; paralysis, 1; peritonitis, 1; puerperal disease, 1; teething, 1; tumor, 2; uremia, 2; whoop, cough, 1; burned, 1; unknown, 6. Under 5 years of age, 77—between 5 and 20 years, 11—between 20 and 40 years, 25—between 40 and 60 years, 14—above 60 years, 14. Born in the United States, 103—Ireland, 30—other places, 8.